REMARKS

In the Office Action, the Examiner objected to the drawings under 37 C.F.R. § 1.83(a). Applicants respectfully submit that every word in the claim does not need to be shown in the drawings. Applicants have a right to claim the invention as broad as the prior art permits. It is also well noted in the art that an antenna such as shown in 210 which would be essentially the input to box to 2 in Figure 3 would receive all of the received signals which would include communication signals at differing power levels such as data and voice signals as described in the specification. Accordingly, Applicants respectfully submit that it is unnecessary to show an antenna in Figure 3 or that there are multiple signals received in the vector. Accordingly, Applicants respectfully submit that the drawings meet the requirements of 37 C.F.R. § 1.83(a).

With respect to the claim objections, corresponding revisions to the claims have been made.

With respect to the 35 U.S.C. § 112 first paragraph rejection to claims 11 – 25, Applicants respectfully disagree. The application needs to teach one skilled in the art how to produce the invention without undue experimentation. One skilled in the art in reviewing this application would readily be able to construct such an invention. To illustrate, one skilled in the art would readily know how to produce an apparatus having an antenna for receiving a plurality of communication signals

of differing power levels. The invention shows in Figure 3, element 304, that a data detection device is used for the high data rate users. It also shows an interference canceling device and a low data rate detection device 314. Accordingly, Applicants respectfully submit that the specification is enabling.

With respect to the art rejections, Applicants respectfully submit the following. The present invention discloses a technique for detecting high data rate data using a first data detector, such as a blind minimum means square error detector, canceling that contribution of the detected data from the received signal and using a second data detector, such as a matched filter or a RAKE-receiver. This technique provides advantages over the prior art.

With respect to the first detector, the complexity of high data rate receivers, such as blind minimum means square error detectors, is based on the number of data signals processed at a time. These detectors tend to cancel all of the user signals simultaneously. The present invention reduces the complexity by not processing the voice signals in these detectors and accordingly, reduces the complexity involved in the processing. Although these receivers could be used to also process the voice signals, the cost for doing so would be increased complexity. After canceling the contribution of these signals from the received vector, the resulting interference cancelled signal has most of the multiuser interference cancelled from the signal. As a result, lower quality data detectors, such as match

filters or a RAKE-receiver, can be used to recover data efficiently from the interference canceled signal. None of the prior art discloses such an arrangement.

With respect to U. S. Patent No. 6,128,486 (Keskitalo et al.), this reference discloses interference cancellation of a highest magnitude and direction signal. However, it does not disclose using two different types of data detectors as recited in the claims for the different signal types. With respect to U. S. Patent Publication No.

US 2002/0057730 A1 (Karlsson et al.), this reference discloses a subtractive interference cancellation block. However, that does not disclose two different data detectors are used. Contrarily, it implies that the same type of data detector would be used for the subtractive interference cancellation. Although the Applicants are somewhat confused with the support for the two different data detectors as cited in the Office Action as being found in Karlsson, Applicants believe that the Examiner is equating the decoding with a data detecting as recited in the claims. In the present application, a first data detector detects one group of signals, has the interference cancelled from it and then detects the remaining group of signals. In the Karlsson reference, all of the data signals are detected during the subtractive interference cancellation and the detected data is decoded.

Reconsideration and entry of this amendment is respectfully submitted.

Respectfully submitted,

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